

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0010] with the following amended paragraph:

[0010] A first module (e.g., a token service or a module that hosts a resource) provides an indication (e.g., an electronic message including a challenge or policy information) that one more measurable aspects of a second module are to be verified. The second module accesses the indication (e.g., from the electronic message or from storage) and formulates an assertion that ~~that~~ can be used to verify that the second module is configured in accordance with the one or more measurable aspects (e.g., that the second module has a specified configuration). Measurable aspects can include, for example, program identity and execution environment. The second module sends the formulated assertion for verification. The first module receives the assertion and verifies the assertion. As appropriate, when measurable aspects of the second module are verified, the second module is allowed to access a resource of the first module or the first module accepts subsequent challenges from the second module.

Please replace paragraph [0035] with the following amended paragraph:

[0035] Figure 1 illustrates an example of an architecture 100 that facilitates determining that a requester is appropriately configured for accessing a resource of a provider in accordance with the principles of the present invention. Within architecture 100, requester 101, intermediary provider ~~102~~ 103, provider 104, and challenge service 102 can interoperate to implement the principles of the present invention. Requester 101, intermediary provider ~~102~~ 103, provider 104, and challenge service 102 can exchange electronic messages in any of a variety of protocols, such as, for example, Simple Object Access Protocol ("SOAP").

Please replace paragraph [0048] with the following amended paragraph:

[0048] Figure 2 illustrates an example flowchart of a method for verifying one more measurable aspects of a module in accordance with the principles of the present invention. The method 200 can be performed to verify that a module is appropriately configured for accessing a resource or issuing challenges to other modules. The method 200 will be described with respect to the modules and data in ~~architecture 100~~ architecture 100. The method 200 includes an act of providing an indication that one or more measurable aspects of another module's configuration

are to be verified. For example, intermediary provider 103 can cause challenge 143 to be issued to requester 101. As depicted in architecture 100, in response to request 141, intermediary provider 103 sends challenge request 142 to challenge service 102. Challenge service 102 responds by issuing challenge 143. Challenge 143 can be a challenge to requester 101 to prove that requester 101 is appropriately configured to access resource ~~403~~ 113. Alternately, intermediary provider 103 can issue a challenge directly to requester 101 or can send policy information to requester 101.

Please replace paragraph [0050] with the following amended paragraph:

[0050] In other embodiments, a requester accesses previously received policy information that indicates how the requester is to prove that the requester is appropriately configured to access a resource. Requester 101 can previously have received policy information indicating how to prove requester 101 is appropriately configured to access resource 113. Requester 101 can access the previously received policy information when requesting access to resource 113. In some embodiments, a request is for the identity of one or more portions of executable instructions and/or an execution environment at the requester.

Please replace paragraph [0053] with the following amended paragraph:

[0053] The method 200 includes an act of receiving an assertion that can be used to verify that the other module is configured in accordance with the one or more measurable aspects (act 205). For example, intermediary provider ~~433~~ 103 can receive token 146 indicating that requester 101 is configured in accordance with configuration 153. Alternately, and when appropriate, intermediary provider 103 can receive proof (e.g., proof 144) directly from requester 101 provider 103.

Please replace paragraph [0056] with the following amended paragraph:

[0056] The method 200 includes an act of verifying the assertion (act 206). For example, intermediary provider 103 can verify token 146 or proof 144. When an assertion is verified (e.g., indicating that requester 101's configuration is appropriate), intermediary provider ~~443~~ 103 can authorize requester 101 to access resource 113.

Please replace paragraph [0057] with the following amended paragraph:

[0057] It may be that requester 101 has requested access to resource 114 and that resource 113 is a portion of a communication path between requester 101 and provider 104. Thus, intermediary provider 103 can request access to resource 114 (and thus functions as a requester) to establish the communication path between requester 101 and provider 104. Accordingly, further determination ~~107~~ 147 can be performed between intermediary provider 103, provider 104, and ~~token~~ challenge service 102, to determine that intermediary ~~provide~~ provider 103 (and potentially also requester 101) is appropriately configured to access resource 114. Further determination ~~107~~ 147 can be performed between intermediary provider 103, provider 104, and ~~token~~ challenge service 102 in a manner similar to determining that requester 101 is appropriately configured to access resource 113.

Please replace paragraph [0058] with the following amended paragraph:

[0058] That is, provider 104 can indicate one or more configurations that are appropriate for accessing resource 114. Intermediary provider 103 can provide proof, based on measurable aspects ~~132~~ 123, that intermediary provider 103 includes at least one of the appropriate configurations. When appropriate, appropriately configured communication path 160 is established between requester 101 and provider 104 and requester 101 is authorized to access resource 114.

Please replace paragraph [0059] with the following amended paragraph:

[0059] Although architecture 100 depicts a provider challenging a requester, it would be apparent to one skilled in the art that architecture 100 can also facilitate a requester challenging a provider. Accordingly, it may be that a requester challenges a provider to ~~provider~~ provide verifiable proof that the provider is appropriately configured to issue challenges to the requester. For example, requester 101 can challenge intermediary provider 103 (and/or provider 104) to provide verifiable proof that intermediary provider 103 (and/or provider 104) is appropriately configured to issue challenges to requester 101.

Please replace paragraph [0062] with the following amended paragraph:

[0062] In response to request/challenge 803, module 802 can send challenge/response 804 to module 801. Challenge/proof 804 ~~an~~ can include proof of a configuration (e.g., a manifest representing a configuration) that is appropriate for interacting with module 801 as well as a configuration challenge for module 801. In response to challenge/proof 804, module 801 can send proof 806 to module 802. Proof 806 can include proof of a configuration (e.g., a manifest representing a configuration) that is appropriate for accessing the resource of 802. In response to proof 806, module 802 can send issuance 807. Issuance 807 can include the requested resource or an indication that module 801 is appropriately configured to access the requested resource. Communication between modules in architecture 800 can be performed similarly to the communication between modules in architecture 100.

Please replace paragraph [0063] with the following amended paragraph:

[0063] Figure 8B depicts a second example of an architecture 810 for performing a bi-directional challenge. Depicted in architecture 800 are modules 811 and 812. Module 811 sends request/challenge 813 to module 812. Request 813 can include a request to access a resource of module. In response to request 813, module 812 can send challenge 814 to module 811. Challenge 814 can include a configuration challenge for module 811. In response to challenge 804 814, module 811 can send proof/challenge 816 to module 812. Proof/challenge 816 can include proof of a configuration (e.g., a manifest representing a configuration) that is appropriate for accessing the resource of 812 along with a configuration challenge for module 812.

Please replace paragraph [0064] with the following amended paragraph:

[0064] In response to proof/challenge 816, module 812 can send proof/issuance 817. Proof/issuance 817 can include poof of a configuration (e.g., a manifest representing a configuration) that is appropriate for interacting with module 811 as well as the requested resource or an indication that module ~~801~~ 811 is appropriately configured to access the requested resource. Communication between modules in architecture 810 can be performed similarly to the communication between modules in architecture 100. Other sequences of communication, in addition to those in Figures 8A and 8B, can also facilitate authorizing a requester to access a resource.

Please replace paragraph [0065] with the following amended paragraph:

[0065] In some embodiments, a configuration challenge occurs along with machine and/or application authentication. Figure 3 illustrates an example of an architecture 300 that facilitates utilizing machine and/or application authentication along with a configuration challenge to determine that a requester is appropriately configured to access a resource of a provider. Within architecture 300, computing system 301 includes requesting instructions 311(a requester) and measurable aspects 321. Measurable aspects 321 generally represent measurable aspects of computing system ~~321~~ 301, such as, for example, identity values and execution environment values associated with requesting instructions 311. Computing system 302 includes providing application 312 and resource 322. Computer system 301 and 302 can communicate to facilitate requesting instructions 311's access to resource 322.

Please replace paragraph [0071] with the following amended paragraph:

[0071] The method 400 includes an act of receiving an assertion that can be used to verify that ~~that~~ the requesting instructions are appropriately configured for interacting with the providing application (act 408). For example, providing application 312 can receive configuration proof 334 indicating that requesting instructions 311 are appropriately configured for accessing resource 322. Configuration proof 334 can include a signed digest or a token. In response to configuration proof 334, providing application 312 can return resource 322 to requesting instructions 311 and/or indicate that requesting instructions are appropriately configured to access resource 322.

Please replace paragraph [0080] with the following amended paragraph:

[0080] Alternately, resource 530 can forward the response to challenge service 510. Challenge service 510 can attempt to verify the response, for example, by comparing the response to answers for other versions of target ~~409~~ 509. For example, an assembly may have a plurality of different versions. Some of the versions may be more recent versions with a wider installation base. However, even older versions of the assembly may be appropriate for accessing resource 530. Yet, since these older versions do not have widespread use challenge service may not pre-compute an answer for these older versions. Thus, when receiving a response that is not an answer, resource 530 can forward the response so that these older versions can be checked. If,

upon validation, the response indicates a correct answer, requester 520 can be given a token for accessing resource 530 (even when the response was not a pre-computed answer).

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Figure 5. This sheet, which includes Figure 5, replaces the original sheet including Fig. 5.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes